

GRIGOR'YEV Y. G.
USSR/Human and Animal Physiology. Action of Physical Agents. T

Abs Jour: Ref Zhur-Biol., No 8, 1958, 37009.

Author : Dorshlak, M.P., Avrunina, G.A., Grigoriev, Y.G.,
Darenskaya, N.G.

Inst :

Title : Materials to Investigation on the Specificity of
Reaction of the Organism to Irradiation.

Orig Pub: Pub. Vestn. rentgenol i radiol., 1957, No 2, 3-10.

Abstract: Attention is attracted to the importance of estimation of the distribution of a dose of internal irradiation in time. In experiments on 400 mice and 115 rats the difference in the value of the absolutely minimal lethal dose of external irradiation and internal irradiation with P^{32} and the time of the animal's death become minimal, when external irradiation was equal to internal

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USSR/Human and Animal Physiology. Action of Physical Agents.

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Abs Jour: Ref Zhur-Biol., No 8, 1958, 37009.

by its distribution in time. However, in applications of "equivalent" external irradiation, the weight loss of the animals began on the first day, in internal irradiation on the third to fifth day. The authors believe that this is caused by uneven spatial distribution of the internal irradiation. Local single irradiation of the head (150-299 r) produced a detectable decrease of the electrical activity of the brain regardless of its original status. The reactivity of the cortex decreased only in the segments submitted to the direct action of the irradiation. In irradiation of various peripheral segments of the body the changes in the electrical activity of the brain depended upon its original condition when the original level was high, a depression of the biological currents of the brain

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USSR/Human and Animal Physiology. Action of Physical Agents. T

Abs Jour: Ref Zhur-Biol., No 8, 1958, 37009.

was noted, and vice-versa. In order to bring about a 100% destruction of the animal by irradiation of various segments of the body, equal in mass, various doses of radiation were needed (for the head, 2000r, chestcage, 10,000 r, the upper abdomen 5000 r.) Along with the common manifestations of radiation illness, identical for irradiations of various segments of the body, specific changes were noted, characteristic for irradiation of definite segments of the body.

Card : 3/3

134

67-7-6/32

AUTHORS: Domshlak, M.P., Vannikov, N.N., Grigor'ev, A.A. 67-7-6/32

TITLE: On the Estimation of Minor Influence Exercised by Radiation Upon the Human Organism (Ob otsenke mal'kikh radiatsionnykh vliyaniy na organizm cheloveka)

PERIODICAL: Atomnaya Energiya, 1957, Vol. 3, No 7, pp. 36-40 (USSR)

ABSTRACT: An evaluation of the influence exercised by radiation upon the human organism is reliable only if the totality of data obtained from several clinical and laboratory investigations are taken into account. The present paper deals only with promising indications for latent changes in tissues occurring at a later date, and give a survey of 28 previous works dealing with the same problem. The determination of the mitotic activity of the epidermis, as well as the investigation of the anomaly on the leukocytes circulating in the blood and the changes taking place in the chromosomes in the cells of bone marrow are technically complicated and insufficiently worked out methods of investigation. Counting the thrombocytes in peripheral blood is a more exact method than counting the leukocytes because the number of thrombocytes diminishes even as a result of minor doses of radiation. In the case of larger radiation doses the following may take place: a) A change

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On the Estimation of Minor Influences Exercised by
Radiation Upon the Human Organism

69-7-6/32

of the thrombocytes formula with a preponderance of riper forms.
b) A change of the dimensions on the thrombocytes, in which case
gigantic thrombocytes eventually occur. Also the lymphocytes with
two-leaved nuclei can serve as an indication for changes taking
place in the organism under the influence of radiation. Also the
methods for the evaluation of the functional state of the blood-
forming system are pointed out. In order to determine a disturb-
ance of the functional state of the bone marrow it is possible to
use a sample with the vitamin B₁₂, and also fluorescence microscopy
can be used with success. Also the inhibition of formation of anti-
particles in irradiated organisms is discussed in short. In the
USSR clinical-physiological methods are developed for the early
discovery of damage caused by radiation; they are partly already
being employed in practice. The most important among them are the
investigations of the various functions of the nervous system. The
authors then discuss in detail the investigation of the functions
of smell-, taste-, face-, skin-, and vestibular analyzers. There
are 6 references, 1 of which is Slavic.

SUBMITTED: January 4, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Radiation - Physiological effects

GRIGOR'YEV, N.G.

DOMSHLAK, M.P.; AVRUNINA, G.A.; GRIGOR'YEV, Yu.G.; DARENSKAYA, N.G.

Materials on the study on the specificity of the body's reactions
[with summary in English]. Vest. rent. 1 rad. 32 no.2:3-11 Mr-Ap '57.
(RADIATIONS, effects, (MLBA 10:8)
specificity, of reactions of organism (Rus))

~~ORIGONAYEV, Yury, Grigor'evich; LANDAU-TYLKINA, S.P., red.; KNAKIN,~~
M.T., tekhn.red.

[Materials for a study of the reactions of the human central nervous system to ionizing radiation] Materialy k izucheniiu reaktsii tsentral'noi nervnoi sistemy cheloveka na ioniziruyushchee izluchenie. Moskva, Gos.izd-vo med.lit-ry Medgiz, 1958. 135 p. (MIRA 12:11)
(RADIATION--PHYSIOLOGICAL EFFECT) (NERVOUS SYSTEM)

BOGOMOL, V.Ye.; ORIGOR'YEV, Yu.G.

Method for studying peripheral blood composition during irradiation.
Med.rnd. 3 no.1:22-26 Jan '59. (MIRA 11:4)

(RADIATIONS, effects,
on blood, technic of investigation of peripheral changes
(Rus)

(BLOOD, effect of radiations,
technic of investigation of peripheral changes (Rus)

AUTHORS: Lebedinskiy, A. V., Grigor'yev, Yu. G., Bemirchoglyan, G. G. NOV/89-5-5-1115

TITLE: On the Biological Effect of Ionizing Radiation in Small Mammals. I
(O biologicheskoy deystvii ioniziruyushchego izlucheniya v
malykh dozakh)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 3, pp. 310-316 (USSR)

ABSTRACT: This is a summarizing account concerning the following Soviet papers: N. I. Nuzhdin, N. I. Shapiro et al.: Disturbance of the sexual cycle in female mice after a daily irradiation of 0.1 r for a period of 15 months. G. S. Strelin: With a dose of 2 r a retardation of the mitosis of the epithelium of the cornea of rats at times occurs. N. P. Smirnova (Laboratory A. V. Lebedinskiy): Irradiation of 50 r causes a phase-modification of irritability in the various centers of hypothalamic areas during stimulation by an electric current. Yu. G. Grigor'yev: The functional state of the human cerebral cortex during a therapeutic irradiation of the head and of the abdomen (electroencephalographical method). A. B. Tsypin: Recording of the biological activity of the brain of hares during irradiation with a dosage of 0.13 to 0.03 r/sec (Method developed by M. N.

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On the Biological Effect of Ionizing Radiation in Small Doses. 15
SOV/69-3-1-15

Livanov). A. I. Danilenko, N. D. Stetsenko: Change of the frequency and amplitude of an electroencephalogram of a dog to which 0,1 to 1 mC/kg P^{32} is administered. I. K. Zyuzin: In the case of serious psychic diseases the cerebral cortex was found to become more sensitive already with respect to indicator doses of radioactive substances. Ye. S. London: The "night feeling" of the eyes as a result of the radiation of radioactive substances. Ts. M. Avakyan: The electroretinogram obtained after irradiation of the isolated eye of a frog with doses of 10 to 100 r. G. G. Demirchoglyan, G. T. Adams, Ts. M. Avakyan: The influence of P^{32} on the functional properties of the retina of the eye of a frog. A. V. Lebedinskiy, G. G. Demirchoglyan: The influence exercised by small doses of radioactive strontium preparations upon the functional state of the retina. There are 3 figures and 33 references, 22 of which are Soviet.

(Continued on abstract 12/15)

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SOV/89-5-3-12/15

AUTHORS: Lebedinskiy, A. V., Grigor'yev, Yu. G., Demirchoglyan, G. G.

TITLE: On the Biological Effect of Ionizing Radiation in Small Doses. II
(O biologicheskom deystvii ioniziruyushchego izlucheniya v
malykh dozakh)
(Continued from abstract 11/15)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 3, pp. 316-320 (USSR)

ABSTRACT: A. V. Lebedinskiy, A. I. Peymer: The dependence of the regeneration and sensitivity of the retina on metabolic processes, especially on the carbon-water metabolism. A. V. Lebedinskiy, V. V. Yakovlev: Disturbed development of reflex-movement reactions (investigated in 300 embryos of rabbits). A. V. Lebedinskiy, Den Chzhi-chen: Decisive change of the nervous system of living beings that have been continuously fed with Sr^{90} during embryogenesis. V. A. Muzheyev: The influence of radon radiation upon the functional state of nerves and muscles. A. I. Danilenko, N. D. Stetsenko: The nerve-cords undergo a modification of functional properties under the effect of irradiation if the radiation dose exceeds 17 erg/mm^2 . N. Ye. Vvedenskiy: The shortening of the duration of nerve reflexes as a result of small doses. V. N. Strel'tsova: $15 - 1000 - 1000 \mu\text{C Cs}^{137}$ or

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SOV/89-5-3-12/15

On the Biological Effect of Ionizing Radiation in Small Doses.]]

Ru^{106} is administered to rats only once, the effect causing swelling is the same as if 150 - 160 $\mu\text{Ci/g}$ were administered for a period of 100 days. N. A. Krayevskiy and N. N. Litvinov obtained a similar result. There are 1 figure and 5 references, 22 of which are Soviet.

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LEBEDINSKIY, A.V., red.; KRAYEVSKIY, N.A., red.; KLOTKOV, F.G.,
red.; GRIGOR'YEV, Yu.G., red.; MARGULIS, U.Ya., red.;
PETROV, R.V., red.

[Collection of abstracts on radiation medicine for 1957]
Sbornik referatov po radiatsionnoi meditsine za 1957 god.
Moskva, Medgiz. Vol.1. 1959. 202 p. (MIRA 17:5)

BRIDOK'ye, Ya. A.

21(4); 17(0)

PHASE I BOOK EXPLOITATION

SOV/2808

International Conference on the Peaceful Uses of Atomic Energy. 2d, Geneva, 1958

Doklady sovetskikh uchenykh; radiobiologiya i radiatsionnaya meditsina
(Reports of Soviet Scientists; Radiobiology and Radiation Medicine)
Moscow, Izd-vo Glav. upr. po ispol'zovaniyu atomnoy energii pri
Sovete Ministrov SSSR, 1959. 429 p. 8,000 copies printed. (Series:
Vtoraya Mezhdunarodnaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii.
Trudy, tom 5)

General Ed.: A.V. Lebedinskiy, Corresponding Member, USSR Academy of Medical
Sciences; Ed.: Z.S. Shirokova; Tech. Ed.: Ye.I. Mazel'.

PURPOSE: This book is intended for physicians, scientists, and engineers
as well as for professors and students at vtuzes where radiobiology and
radiation medicine are taught.

COVERAGE: This is Volume 5 of a 6-volume set of reports delivered by Soviet
scientists at the Second International Conference on the Peaceful Uses of
Atomic Energy, held on September 1-13, 1958, in Geneva. Volume 5 contains

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Reports of Soviet Scientists (Cont.)

SOV/2808

32 reports edited by Candidates of Medical Sciences S.V. Levinskiy and V.V. Sedov. The reports cover problems of the biological effects of ionizing radiation, future consequences of radiation in small doses, genetic effects of radiation, treatment of radiation sickness, uses of radioactive isotopes in medical and biological research, uses of atomic energy for diagnostic and therapeutic purposes, soil absorption of uranium fission products, their intake by plants, and their storage in plants and foodstuffs. References accompany each report.

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Gorizontov, P.D. Problem of Pathogenesis of Acute Radiation Sickness in the Pathophysiological Phase (Report No. 2316)	43

~~Card 24~~

~~GRIGOR'YEV, Y.G.~~; ANDREYEVA, M.P.; KVASNIKOVA, L.N.; PIMENOVA, T.M.;
CHUFIRINA, Z.K.

Effective use of roentgenography. Med.rad. 4 no.6:3-15
Je '59. (MIRA 12:8)
(ROENTGENOGRAPHY,
review (Rus))

TSYPIN, A.B.; GRIGOR'YEV, Yu.G. (Moskva)

Quantitative characteristics of the sensitivity of the central nervous system to ionizing radiations. Biul. eksp. biol. i med. 49 no.1:26-30 Ja '60.
(MIRA 13:7)

1. Nauchnyy rukovoditel' - prof. M.N. Livanov. Predstavlena deystv. chlenom AMN SSSR V.N. Chernigovskim.
(NERVOUS SYSTEM) (RADIATION--PHYSIOLOGICAL EFFECT)

TSYPIN, A.B.; GRIGOR'YEV, Yu.G.

Method for the exclusion of hearing and destruction of the vestibular apparatus in rabbits. Biul. eksp. biol. i med. no.2:114 F '61.
(MIRA 14:5)

1. Predstavlena deystvitel'nym chlenom AMN SSSR A.V. Lebedinskim.
(VESTIBULAR APPARATUS) (DEAFNESS)

GRIGOR'YEV, Yu.G., kand.med.nauk

Character of the development of vegetative reactions in subjects during use of angular accelerations of various magnitudes. Vest. otorin. no.6:76-81 '61. (MIRA 15:1)

1. Iz kliniki ^{bolezney} ucha, nosa i gorla (zav. - prof. A.Kh. Min'kovskiy) Chelyabinskogo meditsinskogo instituta (rukovoditeli roboty - deystvitel'nyy chlen AMN SSSR prof. A.V. Lebedinskiy i prof. A.Kh. Min'kovskiy).
(VESTIBULAR APPARATUS) (ACCELERATION)

GRIGOR'YEV, Yu.G.; BOKHOV, B.B. (Moskva)

New apparatus for adequate stimulation of the vestibular analysis
with utilization of angular accelerations and strength of the
coriolis. Vest.otorin. no.6:85-87 '61. (MIRA 15:1)
(VESTIBULAR APPARATUS)
(OTOLARYNGOLOGY—EQUIPMENT AND SUPPLIES)

S/205/61/001/006/022/022
D243/D305

AUTHOR: Grigor'yev, Yu.G.

TITLE: Problems of the effect of small doses of ionizing radiation on physiological functions

PERIODICAL: Radiobiologiya, v. 1, no. 6, 1961, 966 - 968

TEXT: A conference was held in Moscow, from May 22-24, 1961, at the AS USSR, Moscow, at which the problems of the effect of small doses of ionizing radiation on physiological functions were discussed. Data were presented and systematized concerning the somatic effects of low radiation doses on various biological systems and mechanisms for disturbed function. Particular attention was paid to the nervous system. The following Soviet-bloc workers are mentioned as taking part in the conference: A.M. Kuzin, A.V. Lebedinskiy and Yu.I. Moskalev, who read a paper on "State and perspectives of the biological effect of small doses of ionizing radiation"; N.A. Aladzhalova, D.A. Ginsburg, V.P. Godinym, O.N. Voyevodina, L. S. Gorsheleva and G.L. Vanetsianoy; M.S. Alekseyeva, V.K. Fedorov,

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Problems of the effect of small ...

S/205/61/001/006/022/022
D243/D305

V.M. Zakharov, L.Ye. Khozak, O.N. Chulkova, N.N. Livshits, A.B. Tsypin, V.G. Khrushchev, N.G. Darenskaya, G.M. Pravdina, R.I. Pogosyan, N.M. Trunova, and N.A. Zapol'skaya; V.I. Kandrор, N.D. Bukhman, Ye.V. Danetskaya, M.A. Lebedeva, Ya.I. Azhipa and G.A. Filyashina; B.M. Mirzoyev, S.R. Perepelkin and L.S. Potemkina; M.I. Fedotova, A.V. Lazovskaya, Yu.K. Kudritskiy, L.Ya. Zhorno, L.A. Vasil'yeva and A.V. Loseva, M.D. Tikhomirova and T.A. Bashmakova. ✓

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27.1220

394.59

S/241/62/007/001/001/006
1015/1215

AUTHOR: Domshlak, M. P., Grigor'yev, Yu. G., Darenskaya, N. G., Koznova, L. B., Nevskaya, G. F.,
Nesterova, V. I. and Tereshchenko, N. Ya.

TITLE: Remote observations on persons subjected to radiotherapy

PERIODICAL: Meditsinskaya radiologiya, v. 7, no. 1, 1962, 10-16

TEXT: A previous report (Domshlak et. al., 1957) dealt with observations on 160 persons who had been subjected to X-ray and gamma-ray therapy 2 to 7 years prior to the study period. The present article is based on observations on 218 persons, aged thirty to sixty, at various intervals (up to 10 years) after having been subjected to radiation. In 41.9% of the cases, the general condition of persons irradiated in the past became worse. On the other hand, no abnormal pressure was noticed, despite the fact that hypertension was a common finding during the irradiation period. Ophthalmological examination did not reveal any changes except those due to aging. Various functional disorders were noticed in the nervous system, including both cortical and sub-cortical disturbances. In some cases, microsymptoms of organic damage of the CNS were present. There is 1 table.

SUBMITTED: July 3, 1961

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X

BIBIKOVA, A.F.; BUSYGIN, V.Ye.; GRIGOR'YEV, Yu.G.; KALYAYEVA, T.V.;
LYUBIMOVA-GERASIMOVA, R.M.; TSYPIN, A.B.

Reaction of the organism to massive γ -irradiation. Pat.
fiziol. i eksp. terap. 6 no.4:57-62 J1-Ag '62. (MIRA 17:8)

BUSYGIN, V.Ye.; GRIGOR'YEV, Yu.G.

Method for the objective registration of response reactions of the body following adequate stimulation of the vestibular analyzer (in an experiment. Biul.eksp.biol.i med. 54 no.7:102-104 J1 '62.

(MIRA 15:11)

1. Nauchnyy rukovoditel' - deystvitel'nyy chlen AMN SSSR A.V. Lebedinskiy. Pradstavlena deystvitel'nym chlenom AMN SSSR A.V. Lebedinskim.

(LABYRINTH (EAP)) (PHYSIOLOGICAL APPARATUS)

GRIGOR'YEV, Yuriy Grigor'yevich; ZAVODCHIKOVA, A.I., red.; VLASOVA, N.A., tekhn. red.

[Radiation lesions and compensation for disturbed functions; data from a study of the primary reactions of the organism under the influence of ionizing radiation in small and large doses] Luchevye porazheniia i kompensatsiia narushennykh funktsii; materialy izucheniia pervonachal'nykh reaktsii organizma pri vozdeistvii ioniziruiushchego izlucheniia v mal'nykh i bol'shikh dozakh. Moskva, Gosatomizdat, 1963. 201 p. (MIRA 16:5)

(Radiation--Physiological effect)

(Radiation--Dosage)

ACCESSION NR: AT4042699

S/0000/63/000/000/0333/0339

AUTHOR: Lebedinskiy, A. V.; Arlashchenko, N. I.; Bokhov, B. B.; Grigor'yev, Yu.G.; Kvasnikova, L. N.; Farber, Yu. V.

TITLE: The importance of the vestibular analyzer in the selection and training of cosmonauts

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatzionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 333-339

TOPIC TAGS: rotating chamber, tilt table, rotation effect, man, Coriolis acceleration

ABSTRACT: One of the main criteria upon which the system of cosmonaut selection should be based is the evaluation of the vestibular analyzer. The evaluation of other systems (i. e., the visual analyzer, the retina and muscles of the eye, and interoceptors) which enable a cosmonaut to orient himself in space should be of almost equal importance in the selection program. Experience has shown that a

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disruption of information concerning the position or the movement of the body can lead to vegetative disorders. This consideration led to studies of the analyzer systems of each of the cosmonauts, the interaction between analyzer systems, and the condition of vegetative functions during unusual interaction between analyzers (such as the conditions which arise during space flight). The special conditions arising during space flight are limitation of afferentation in a weightless state and the presence of unusual stimulation (vibration, noise, etc.). The differentiated study of the vestibular analyzer should include determination of the threshold sensitivity of the semicircular canals to an adequate stimulus, determination of a reactivity curve during application of angular accelerations of various magnitudes, determination of adaptive abilities to the action of angular acceleration, and tests with Coriolis acceleration. The research on threshold sensitivity of the semicircular canals to adequate stimuli was performed for both positive and negative acceleration. Research performed on fifty healthy persons indicated that the scope of variation of threshold sensitivity is not great. It varies from 0.1 to 0.50 per sec² (20 second action of acceleration) for positive accelerations, and 1.5 to 5° per second (for a stop stimulus of 0.15 seconds) for negative accelerations. However, various outside stimuli and physical conditions of the environment can greatly affect the thresholds of vestibular sensitivity. The data

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ACCESSION NR: AT4042699

obtained indicate that the study of vestibular thresholds will be very helpful in the early detection of hidden disturbances in the activity of the analyzer which cannot be detected easily by other means. The most common forms of investigating the functions of the semicircular canals are various rotational tests. Current trends indicate that testing in the near future will be based on methods of minimal stimulation and successive rotations of increasing intensity. Evaluation will have to be based on methods which lend themselves to quantitative analysis. Numerous experiments have shown that training consisting of the systematic stimulation of the vestibular mechanism with the aid of various exercises of rotational tests increases the vestibular stability of the subjects. The speed with which adaptation takes place varies with each individual. This results in the problem of developing a test for the objective evaluation of the degree of adaptation. Tests based on registration of nystagmus are inadequate because they fail to take into account the vegetative complex. Apparently, the real picture of adaptive qualities of the vestibular analyzer can only be obtained from a more complete evaluation involving vestibular-vegetative, vestibular-somatic, and sensory reactions arising in response to repeated stimulations. Laboratory studies are currently being conducted in this area. The use of Coriolis accelerations as a test has as its purpose the study of the summary reaction which arises in labyrinth recept-

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ACCESSION NR: AT4042699

ors in response to stimulation obtained during the combined action of angular and linear accelerations. Laboratory tests with the periodic application of Coriolis accelerations accompanied by slow rotation have indicated that even a short rotation leads to a disruption of walking, to a change in skin temperature, and to a change in the pulse frequency. At the same time, a lowering of the threshold of sensitivity to Coriolis accelerations was noted without the threshold to angular acceleration being affected. A very interesting interrelationship exists between the vestibular and optical analyzers. Laboratory experiments have confirmed that stimulation of the retina has an inhibiting effect on the vestibular analyzer. Tests have indicated that the result of interaction between the optical and the vestibular stimuli is determined by the functional condition of the vestibular analyzer. It became apparent that if the excitability of the vestibular analyzer was increased by radioactivity, inhibition of spontaneously arising nystagmus by optical stimulation of the retina became more distinct. The level of excitability of the vestibular analyzer was achieved by means of radioactive tars.

ASSOCIATION: none

Card

4/5

ACCESSION NR: AT4042699

SUBMITTED: 27Sep63

ENCL: 00

SUB CODE: L8

NO REF SOV: 000

OTHER: 000

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GRIGOR'YEV, YU. G.

7

ACCESSION NR: AT4042700

S/0000/63/000/000/0339/0343

AUTHOR: Lebedinskiy, A. V.; Arlasehchenko, N. I.; Busy'gin, V. Ye.; Vartbaronov, R. A.; Veselov, A. S.; Volokhova, N. A.; Grigor'yev, Yu. G.; Yemel'yanov, M. D.; Kalyayeva, T. V.; Kry'lov, Yu. V.; Polyakov, B. I.; Farber, Yu. V.

TITLE: Effects of Coriolis accelerations on the human organism

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsonnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 339-343

TOPIC TAGS: vestibular analyser, cosmonaut selection, cosmonaut training, semi-circular canal, acceleration, rotation, nystagmus, optical analyser, Coriolis acceleration

ABSTRACT: Studies of the effect of prolonged Coriolis accelerations on the human organism must be made as a preliminary step toward the creation of artificial gravity in spaceships. Studies were performed in a slowly rotating MBK-1 chamber (a cylindrically shaped room 2.1 m in diameter and 2.3 m high, equipped with two armchairs). In the first series of experiments, 13 healthy persons were subjected

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ACCESSION NR: AT4042700

to prolonged rotation of 1 to 5 hours at an angular velocity of $5.3^\circ/\text{sec}$. In the second series of experiments, 4 subjects were rotated for 24 hours at angular velocities of 5.3, 10.6, and $21.2^\circ/\text{sec}$. Coriolis accelerations were created periodically by tilting the body and head in a plane perpendicular to the plane of rotation of the chamber at the rate of 1 movement/sec. Prolonged stay of subjects with normal vestibular sensitivity under conditions of rotation at 5.3, 10.6, and $21.2^\circ/\text{sec}$ resulted in functional changes in the condition of the central nervous system and the cardiovascular system, and in disruption of the body temperature control and the balancing function. The degree of vegetative disorders was found to be directly proportional to the speed of rotation and the degree of vestibular sensitivity of the subjects. During cumulative action of Coriolis accelerations, the majority of the subjects developed an adaptation which was noted from 1 to 5 hours after beginning of the rotation. On the basis of the results obtained, the method of prolonged slow rotation is recommended for training purposes.

ASSOCIATION: none

SUBMITTED: 278463

ENCL: 00

SUB CODE: 18

NO REF SOV: 000

OTHER: 000

Card 2/2

GRIGOR'YEV, Yu.G.; KVASNIKOVA, L.N.

Reception of ionizing radiation by the body. Med. rad. 8 no.6:
85-91 Je '63. (RIPA 27:4)

EVANENIKOV, A.I.; GRIGORIYEV, Ya.G., doktor med. nauk, nauchnyy rukovoditel'

Effect of proton and gamma radiation on the functional state of
the vestibular analyzer. Med. rad. 8 no.9:44-50 S'63.

(NINA 12:4)

ARLASHCHENKO, N.I.; BOKHOV, B.B.; BUSYGIN, V.Ye.; VOLOKHOVA, N.A.;
GRIGOR'YEV, Yu.C.; POLYAKOV, B.I.; FARBER, Yu.V.

Body reactions during the prolonged effect of coriolis accelerations. Biul. eksp. biol. i med. 56 no.8:28-33 Ag '63.

(MIRA 17:7)

1. Nauchnyy rukovoditel' -- deystvitel'nyy chlen AMN SSSR
prof. A.V. Lebedinskiy. Predstavleno deystvitel'nyy chlenom
AMN SSSR A.V. Lebedinskiy.

ACCESSION NR: AT4037698

S/2865/64/003/000/0278/0288

AUTHOR: Lebedinskiy, A.V.; Grigor'yev, Yu. G.; Lyubimova-Gerasimov, R. M.;
Polyakov, B. I.

TITLE: Vegetative reactions during stimulation of the vestibular analyzer and
their possible role in complicating space flight conditions

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy
biologii, v. 3, 1964, 278-288

TOPIC TAGS: acceleration, vestibular analyzer, space flight, Coriolis acceleration,
rabbit, vegetative reflex

ABSTRACT: The role of angular accelerations and Coriolis accelerations on the
vestibular function was studied by means of a BY-2 type accelerator, on which it
was possible to produce angular accelerations ranging from 0.05 up to $1200^{\circ}/\text{sec}^2$
and any magnitude of angular velocity up to $180^{\circ}/\text{sec}$. Vegetative reactions are of
special interest since by stimulating the vestibular apparatus, it is possible to
observe practically all known vegetative reactions. It has been established that
the magnitude of the reaction depends on the duration of the stimulus (accelera-
tion). Data obtained indicate that after whole-body irradiation of the animal,

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Card

ACCESSION NR: AT4037698

more time is required for acceleration to produce an equal reaction. There is reason to believe, in this case, that radiation affects the central nervous system and not the receptor. So far there have been practically no attempts made to evaluate the biological significance of vegetative reflexes which arise during stimulation of the vestibular analyzer. When rabbits were subjected to rocking in the horizontal (duration of acceleration, 0.15 sec), at $66^{\circ}/\text{sec}^2$, a diminution of respiration amplitude was noted; at $400^{\circ}/\text{sec}^2$ the diminished amplitude increased in frequency; at $600^{\circ}/\text{sec}^2$ the amplitude dropped off sharply with no marked frequency increase; and at $1200^{\circ}/\text{sec}^2$ there was a distinct break in respiration. Reactions of the cardiovascular system to acceleration are complex. Thus, when rabbits are subjected to an acceleration of $0.05^{\circ}/\text{sec}^2$ for 30 sec, skin temperature rises. But, if accelerations are increased to 1.5 or to $3.2^{\circ}/\text{sec}^2$ for the same duration of time, skin temperature drops. The depressive reaction appears, apparently, only in response to large accelerations because when rabbits were accelerated in the range from 60 to $800^{\circ}/\text{sec}^2$ (duration, 0.15 sec), no depressive reaction was observed. When rabbits were exposed to short-term acceleration of $5^{\circ}/\text{sec}^2$, a diminution of blood circulation in the brain was observed. This effect was distinct if the acceleration lasted 12 or 24 seconds, but indistinct if the duration was only 6 seconds. The authors have stressed the importance of.

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ACCESSION NR: AT4037698

duration of effect of acceleration on appearance of vestibular reactions. Very possibly this indicates the significant role of inclusion of the endocrine mechanism, particularly of the adrenal system, into the complex of vegetative reactions, and the consequent stimulation of the reticular formation. If the appearance of vegetative reflexes observed during stimulation of the vestibular mechanism is tied to the stimulation of the reticular formation, then, in the final analysis, their involvement must be controlled by the cortex of the cerebral hemispheres. It was also noted that stimulation of the vestibular apparatus limits the activity of the cortical component of vegetative reactions.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 010

OTHER: 004

Card 3/3

L 32453-65 EWG(j)/EWt(m)
ACCESSION NR: AF4048762

S/0219/64/058/011/0122/0124

AUTHOR: Arlashchenko, N. I.; Grigor'yev, Yu. G.; Malinin, A. B.

TITLE: A method for isolated destruction of the otolithic apparatus with ionizing irradiation. Placement of applicators in the inner ear vestibule. 15
19

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny*, v. 58, no. 11, 1964, 122-124 and insert facing p. 117

TOPIC TAGS: rabbit, ear vestibular apparatus, otolith destruction, promethium 147, beta radiation, ion exchange resin, labyrinth

ABSTRACT: Radioactive applicators with a soft beta-emitter for isolated destruction of otoliths in animals are described. Promethium-147 is recommended as a radiation source because of its low energy beta-particles (0.22 Kev). A promethium-147 radiation dose decreases by about 250 times at a distance of 250 microns from the radiation source surface. This distance is equivalent to the thickness of the macula utriculi sensory epithelium containing the

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L 32453-65

ACCESSION NR: AP4048762

cells which respond to otolith movement changes. Applicators are made of sulfonated polyethylene in the form of a plate (1 x 2 mm) or of ion exchange KU-2 resin in the form of a ball (1 mm in diameter). The radioactive applicators are placed in the inner ear vestibule of operated animals and morphological tissue changes are determined later by histological examination of temporal bone pyramid preparations. The method has been employed successfully in rabbits to destroy the otoliths without affecting the semicircular canals of the ears except for slight dilation of blood vessels. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 23Apr63

ENCL: 00

SUB CODE: LS

NR REF SOV: 000

OTHER: 009

Card 2/2

BOKHOV, B.B.; SHIPOV, A.A.; SELISOR'YEV, Yu.G., doktor med. nauk,
russkiy rukovoditel' raboty

Effect of repeated serial stimulations of the vestibular
analyzer in rabbits on the quantitative relation of the
duration of nystagmus to the value of negative angular
acceleration. Biol. eksp. biol. i med. 60 no.9:59-62
1965. (MIRA 18:10)

I 10272-66 EWT(1)/FS(v)-3 DD

ACC NR: AP5028883

SOURCE CODE: UR/0219/65/060/011/0003/0006

AUTHOR: Grigor'yev, Yu. G. (Moscow); Farber, Yu. V. (Moscow) 11
23

ORG: none

TITLE: The functional condition of the vestibular analyzer ² in man during a 120-day stay in a hermetically sealed chamber

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 60, no. 11, 1965, 3-6 ²

TOPIC TAGS: vestibular analyzer, stimulus, cerebral cortex, counterrotation illusion, vestibular function, nystagmus

ABSTRACT: The demonstrated ability of inadequate vestibular stimuli to affect vestibular function was studied in conditions simulating life inside a spaceship. Five healthy men aged 19—32 stayed in a hermetically sealed chamber for 120 days during which time they were examined at monthly intervals. Examination was also conducted 3, 8, 18, and 33 days after they had left the chamber. The threshold of vestibular sensitivity (to an adequate stimulus) was determined on a rotating chair with the subject's head fixed at a 30° angle to the axis of rotation. The adequate stimulus consisted of the negative angular acceleration which developed when the chair stopped. Vestibular sensitivity was judged by the appearance of nystagmus and the illusion of counterrotation. There was a direct correlation between the magnitude of the stimu-

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UDC: 613.693:612.886

L 10272-66

ACC NR: AP5028883

lus and the length of nystagmus in all subjects. Experimental results showed changes in nystagmus during the subject's stay in the sealed compartment: both the duration of nystagmus and the slope of plotted nystagmus curves decreased. Individual differences were noted in the pattern of decrease of these factors. No reliable changes were observed in vestibular autonomic reactions during the observation period (arterial pressure, pulse rate, etc.). The threshold of sensitivity to nystagmus changed very little. By the end of the experiment, changes in cupulograms were similar for all subjects; hence, the medium which the subjects inhabited definitely influenced the condition of the vestibular analyzer. The fact that adequate vestibular stimuli are absent in these experimental conditions (with the exception of some limited motor activity) is a strong indication that the changes observed in nystagmus probably reflect functional changes in the cerebral cortex rather than changes in the receptor apparatus of the vestibular analyzer. Furthermore, increases in thresholds of the sensory component of the vestibular reaction (illusion of counterrotation) observed after subjects left the chamber were probably due to readaptation to a new routine and different physical conditions. Orig. art. has: 3 tables. [JS]

SUB CODE: 06/ SUBM DATE: 18Jan65/ ORIG REF: 005/ OTH REF: 003/ ATD PRESS: 4164

OC
Card 2/2

ACC NR: AT6036541

SOURCE CODE: UR/0000/66/000/000/0136/0136

AUTHOR: Grigor'yev, Yu. G.; Domilak, M. P.; Darenskaya, N. G.; Rayevskaya, S. A.

ORG: none

TITLE: Evaluation of radiation hazard and basis for establishing permissible doses of ionizing radiation for cosmonauts flying to the moon [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 136

TOPIC TAGS: cosmic radiation biologic effect, radiation protection, radiation dosimetry, lunar space flight, radiation permissible dose, radiation protection

ABSTRACT: In estimating the potential radiation hazard of a lunar flight, the following factors were considered: 1) the space radiation environment on the lunar trajectory, 2) the combined effect of ionizing radiation and other spaceflight factors on the cosmonaut, 3) the possibility of physical shielding, and 4) the effectiveness of various recommended prophylactic substances. Radiobiological tests showed that the RBE of protons, which constitute the chief radiation hazard, is close to one. Thus it was possible to use experimental and clinical observations of gamma- and x-ray

Card 1/2

ACC NR: AT6036541

irradiation to evaluate the space radiation hazard on brief flights. Experimental studies on large laboratory animals were used to establish a basis for permissible doses during lunar flight. This method permitted evaluation of the character and degree of radiation injuries from gamma and proton irradiation in the dose range to be encountered during lunar flight. In addition, clinical observations of people subjected to local irradiation for cancer treatment were analyzed. A classification of regulated doses for brief spaceflights was made on the basis of this material. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06, 18, 22 / SUBM DATE: 00May66

Card 2/2

ACC NR: AT6036542

SOURCE CODE: UR/0000/66/000/000/0137/0138

AUTHOR: Grigor'yev, Yu. G.; Kovalev, Ye. Ye.

ORG: none

TITLE: Spaceflight radiation hazards [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SCURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 137-138

TOPIC TAGS: radiation protection, radiation dosimetry, solar flare, cosmic radiation, biologic effect, proton radiation biologic effect, radiation shielding, space pharmacology

ABSTRACT: Cosmic radiation is made up of galactic cosmic radiation, radiation from the Earth's radiation belts and from other planets, and corpuscular radiation from solar flares. Doses from galactic cosmic radiation in interplanetary space can reach 180-250 rem/day, an obviously serious hazard both for cosmonauts and for the life-support system on a spacecraft. Mean tissue doses from protons in the inner radiation belt can amount to 0.16 rem/day with an orbit of 500 km (orbital inclination 65°). However, electrons in the outer radiation belt have a low penetrating capacity and act chiefly on the skin. Corpuscular radiation from solar flares consists mostly of alpha particles and protons, the latter with energies ranging from several Mev to dozens of bev. This wide range of proton energy produces

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ACC NR: AT6036542

considerable decreases in the dose absorbed at different tissue depths when relatively thin shielding is used. However, as shielding thickness is increased, high-energy protons are filtered out and dose decreases with tissue depth no longer occur. Of course the total radiobiological effect on the cosmonaut can be substantially altered by many spaceflight factors, including weightlessness, altered gas composition, and others.

A system of radiation safeguards for spaceflight must include general shielding of inhabited compartments, a radiation shelter, local shielding of cosmonauts, and pharmacochemical means of protection. Radiation dosimetry in spaceflight will be accomplished by on-board dosimeters, individual dose monitors, and signal and warning systems. Drugs carried on the spacecraft will be used for prevention and treatment of radiation injuries. In addition to complex equipment carried on board, the space radiation environment of the specific flight trajectory will be carefully monitored from Earth. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 2/2

GRIGOR'YEV, Yu.I., inzh.; KOSTYUK, V.V., inzh.; KABANOV, B.P., inzh.

Operation of automated remote control for main GRT engines.
Sudostroenie 30 no.9:44 S '64. (MIRA 17:11)

KOTOL, M.I., inzh. tekhn. nauk; GRIGOR'YEV, Yu.I., inzh.

Investigating dynamic fatigue stress of a bolt. Nauch. soob. IGD
86:74-82 '65. (MIRA 18:9)

GRIGOR'YEV, Yu.L.

Steel shot-boring in rocks of varying hardness. Razved. i okh.
nedr 20 no.1:28-32 Ja-F '54. (MLBA 9:12)

(Boring machinery)

VOLKOV, Aleksandr Spiridonovich; KALININ, Anatoliy Georgiyevich;
BRONZOV, Anatoliy Samsonovich. Priniral uchastiye GRIGOR'YEV,
Yu.L., inzh.; ISAYEVA, V.V., ved. red.; POLOSINA, A.S., tekhn.
red.

[Drilling pipes and their joints; a manual] Buril'nye truby i ikh
soedineniia; spravochnoe rukovodstvo. Moskva, Gostoptekhizdat,
1962. 125 p. (MIRA 15:7)

(Boring machinery)

GRIGOR'YEV, Yu.M., uchitel'

Equipping a chemical laboratory. Khim. v shkole 15 no.3:41-45
My-Je '60. (MIRA 14:7)

1. Srednyaya shkola No.19 pos. Shikhany Saratovskoy oblasti.
(Chemical laboratories--Equipment and supplies)

POPKO, V.N., inzh.; BEN'YAMINOVICH, I.M., inzh.; BEREZIN, N.N., inzh.;
GRIGOR'YEV, Yu.M., inzh.

Manufacture of large reinforced concrete elements made with a
lime-slag binder. Bet. 1 shel.-bet. 9 no.2:60-63 F '63.

(MIRA 16:5)

(Precast concrete--Testing) (Binding materials)

POPKO, V.N., inzh.; PETUKHOVA, V.V., inzh.; GRIGOR'YEV, Yu.M., inzh.

Lightweight concrete on a base of round algeporites. Sbor. trud.
Sverd. nauch.-issl. inst. po stroi. no.10:93-108 '63.

(MIRA 17:10)

L 29819-66 EWT(1)/ETC(f) WW

ACC NR: AP6012679

SOURCE CODE: UR/0170/66/010/004/0491/0494

56

AUTHOR: Grigor'yev, Yu. M.

3

ORG: Branch of the Institute of Chemical Physics of the AN SSSR, Moscow Region (Filial Instituta khimicheskoy fiziki AN SSSR, Moskovskaya oblast')

TITLE: Unsteady state conductive heat transfer of a body in an infinite medium

SOURCE: Inzhenerno-fizicheskij zhurnal, v. 10, no. 4, 1966, 491-494

TOPIC TAGS: conductive heat transfer, thermodynamic analysis, Nusselt number

ABSTRACT: The article gives the results of calculations of the Nusselt number for bodies of different geometrical shapes in an infinite medium, the temperature of the surface of the bodies being a function of time. The problem under consideration reduces to the solution of the following differential equation:

$$\frac{\partial \theta}{\partial \tau} = \frac{\partial^2 \theta}{\partial \xi^2} + \frac{n}{\xi} \frac{\partial \theta}{\partial \xi} \quad (1)$$

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UDC: 536.21

L 29819-66

ACC NR: AP6012679

The initial conditions are:

$$\tau=0, \theta=0. \quad (2)$$

The boundary conditions are:

$$\xi=1, \theta=\varphi(\tau), \quad (3)$$

$$\xi \rightarrow \infty, \theta \rightarrow 0. \quad (4)$$

Here $\theta = (T - T_{\infty}) / (T_r - T_{\infty})$ is the temperature; $\tau = at/r^2$ is the time; $\xi = x/r$ is a coordinate. Overall conclusion of the mathematical development is that the method of calculating the Nusselt number for the case of spherical symmetry can be used only for a limited class of functions which describe the temperature variation of the surface of the body. Orig art. has: 15 formulas.

SUB CODE: 20/ SUBM DATE: 02Oct65/ ORIG REF: .002.

Card 2/2 ∇

L 15624-85 EPA/EPA(s)-2/EPR(a)/EPR(c)/EPR/T Pal-4/Pr-4/Pl-10 ASD-3/APTC/ABD/
APGK/ESD(1)/RAE(2)/AEDB(A)/EDC(b)/SSD/SSD(1)/ESD/AFWL/ADD(1.3)/AFEDB/APTC(1)
EN/EN/END/RE/PR

ACCESSION NR: AP404488.

S/0020/64/15/006/1427/1430

AUTHOR: Grigor'yev, Y. M.; Maksimov, E. I.; Herzhakov, A. G.

TITLE: Ignition of explosive particles in a hot gas

SOURCE: AN SSSR. Doklady*, v. 157, no. 6, 1964, 1427-1430

TOPIC TAGS: explosive, ignition, combustion, propellant, solid propellant, ignition delay

ABSTRACT: The ignition of spherical barium azide particles produced by abrasion of crystals on emery paper was studied at 260—650C in an assembly containing an electrically heated vertical glass tube into which a particle was introduced from the top and preheated air or nitrogen from the bottom. The falling speed of the particle could be controlled by regulating the countercurrent air flow. For shorter ignition delays a horizontal quartz tube was used. The ignition process was photographically scanned and a plot of ignition delay vs. temperature was obtained for different particle diameters (see Fig. 1 of the Enclosure). Each point represents the average of 15—20 measurements. The figure shows that the curves for different particle diam-

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L 15634-65

ACCESSION NR: AP4044885

eters intersect. The ignition delay increased with increasing particle diameter at higher temperatures. The particle radius (r_0) was correlated with the critical temperature $T_{0,cr}$ (the mean between the explosive and nonexplosive decomposition temperatures) by the following formula:

$$\ln \frac{T_{0,cr}^3}{r_0^2} \left(1 + \frac{\psi_0 T_{0,cr}^3}{\lambda_{av}} \right) = \ln \frac{Qk_0 E_0}{3R\lambda_{av}} - \frac{E}{R} \frac{1}{T_{0,cr}}$$

where $E = 35,000$ cal/mole, $Qk_0 = 4 \cdot 10^{15}$ cal/cm³ sec, $\lambda_{av} = 10^{-4}$ cal/cm. sec deg, and $\psi = 4$ (E activation energy; Q , heat release rate; k_0 , preexponential factor; λ , thermal conductivity; R , gas constant). With this formula, the critical temperature was plotted versus the radius in Fig. 2. Orig. art. has: 4 figures and 3 formulas.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AN SSSR)

Card 2/5

L 15634.65
ACCESSION NR: AP4044885

SUBMITTED: 20Apr64

ENCL: 02

SUB CODE: WA

NO REF SOV: 008

OTHER: 002

Card 3/5

1. 15634-65

ACCESSION NR: AP4044885

ENCLOSURE: 01

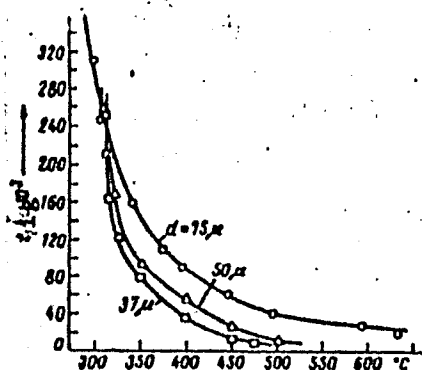


Fig. 1. Dependence of the ignition delay time of barium azide particles of different size on temperature in the range of 280—650C.

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L 15634-65

ACCESSION NR: AP4044885

ENCLOSURE: 02

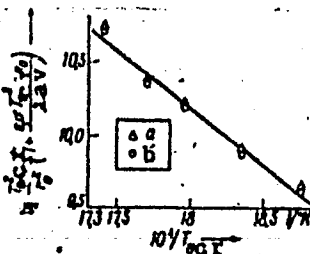


Fig. 2. Dependence $T_{0,cr}(\tau_b)$
 $c_1 = 1; b - c_1 = 0.$

Card 5/5

L 7703-66 EPA/EWA(1)/EWT(m)/EWP(f)/EWA(b)-2/EWA(c)/ETC(m) WW/JWD

ACC NR: AP5026031

SOURCE CODE: UR/0405/65/000/001/0093/0102

AUTHOR: Grigor'yev, Yu. M. (Moscow); Maksimov, E. I. (Moscow); Merzhanov, A. G. (Moscow)

ORG: none

TITLE: Relationships of ignition of homogenous explosive particles in hot gas

SOURCE: Nauchno-tekhnicheskiye problemy gorenija i vzryva, no. 1, 1965, 93-102

TOPIC TAGS: combustion, explosion, explosive, propellant, solid propellant, ignition.

ABSTRACT: A theory of the kinetics of decomposition of nonvolatile explosive particles in a hot gas has been developed on the basis of a simple model which assumes that the exothermal reaction takes place on the surface of the condensed particle which does not undergo phase transformation or change of size in the pre-explosion period, that the spherical explosive particle enters a cavity filled with hot gas, that heat transfer inside the particle takes place by conduction and external heat transfer by conduction and radiation, and that convective transfer is absent. The analysis yielded expressions for the temperature profile in the gas and inside the particle, for the time required to heat the particle, and for the induction period. To verify the theoretical relationships, experiments were made with nitrocellulose-pyroxylene powder particles (50—150 μ particle size) in horizontal and vertical glass tubes. The ignition temperatures of 50 μ particles were 255C in air and 246C

Card 1/2

L 7703-66

ACC NR: AP5026031

in argon. This difference is attributed to the higher thermal conductivity of argon. Ignition delay times determined as a function of temperature were in good agreement with the theory. Orig. art. has: 9 figures. 0

[PV]

SUB CODE: FP/ SUBM DATE: 18Dec64/ ORIG REF: 005/ OTH REF: 001/ ATD PRESS:

4141

Card

mg
2/2

1 23275-66 EMT(m)/EPE(n)-2/T/EWP(t) IJP(c) JD/WR/JN/JMD/WE
 ACC NR: AP6012523 SOURCE CODE: UR/0062/66/000/003/0422/0429

AUTHOR: Maksimov, E. I.; Grigor'yev, Yu. M.; Merzhanov, A. G. 27
B 23

ORG: Institute of Chemical Physics Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

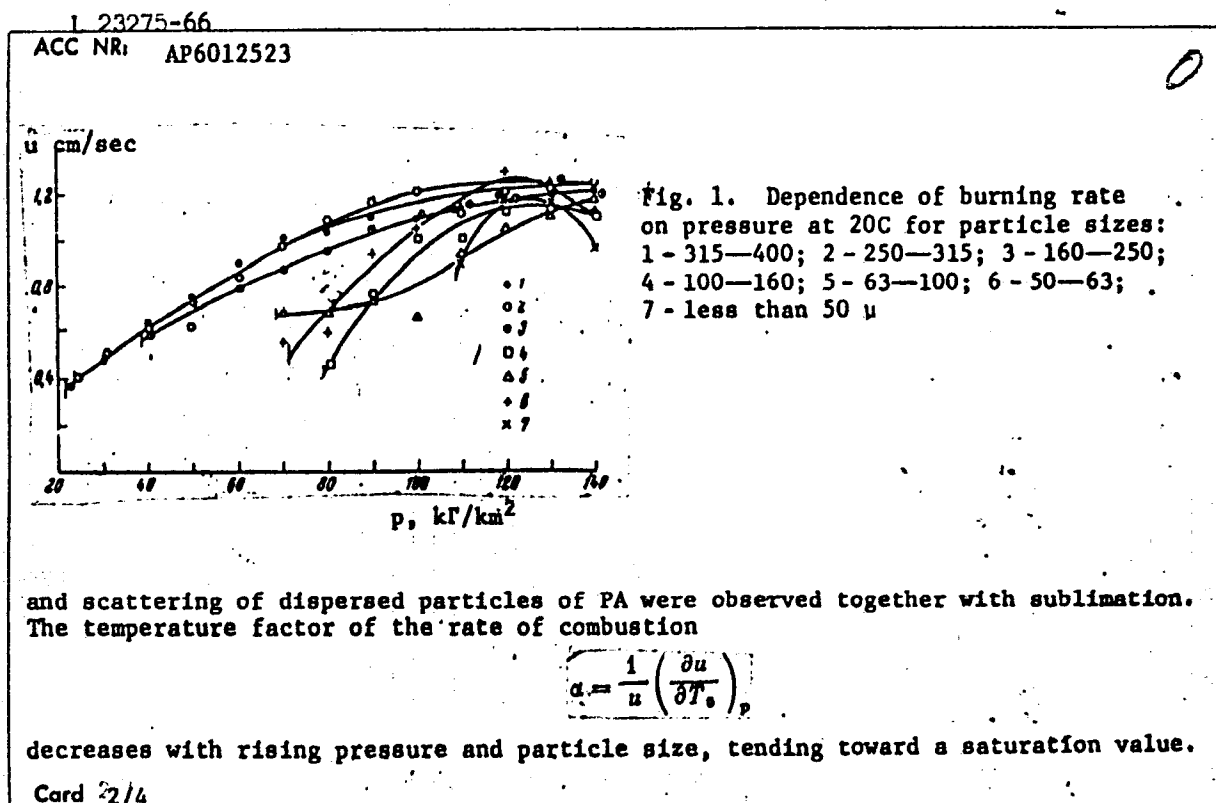
TITLE: The rules and mechanism of ammonium perchlorate combustion 11 3 27

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 422-429

TOPIC TAGS: ammonium perchlorate, combustion, solid propellant

ABSTRACT: The thermal decomposition of ammonium perchlorate (AP) is discussed extensively in the literature. PA sublimates on heating under high vacuum. Sublimation is suppressed with rising pressure and decomposition with evolution of heat takes place. Burning of PA occurs only at higher pressures. The purpose of this work was to investigate the nature of combustion of PA depending on temperature, pressure, particle size, density, and addition of ammonium chloride. Experiments were conducted in a constant-pressure bomb under nitrogen. The temperature was maintained by circulation of a thermostated liquid. The rate of combustion was determined photographically on a moving film. Technical grade PA was used; results obtained from PA purified by recrystallization differed by no more than experimental error ($\pm 4\%$). Samples were obtained by pressing PA which had been ground and graded according to size. Formation

Card 1/4 UDC: 541.126+541.124



L 23275-66

ACC NR: AP6012523

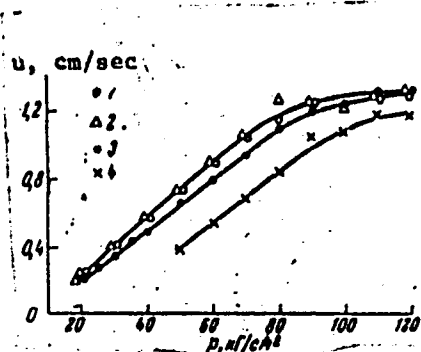


Fig. 2. Dependence of burning rate and pressure at 20C for particle sizes: 1-315-400; 2-250-315; 3-100-160; 4-less than 50 μ

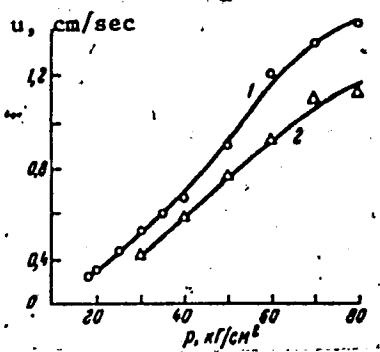


Fig. 3. Dependence of burning rate and pressure at 120C for particle sizes: 1-1.90; 2-1.5 g/cm³

The data obtained led to the formulation of a mechanism which in a number of cases does not agree with the combustion theory of volatile substances developed by Belyayev and Zeldovich. The authors wish to thank G. B. Manelis and V. A. Strunin for

Card 3/4

L 23275-66

ACC NR: AP6012523

pointing out the part played by the reaction in the condensed phase in the course of
PA combustion, and V. A. Linde, and Ye. I. Dmitriyeva for the chemical analyses:
Orig. art. has: 9 figures and 2 tables.

[VS]

SUB CODE: 21/ SUBM DATE: 31Oct63/ ORIG REF: 010/ OTH REF: 005/ ATD PRESS:

4235

Card

4/4 ULR

ACC NR: AP7000046

SOURCE CODE: UR/0207/66/000/005/0017/0024

AUTHOR: Grigor'yev, Yu. M. (Moscow); Merzhanov, A. G. (Moscow);
Pribytkova, K. V. (Moscow)

ORG: none

TITLE: Critical conditions of thermal explosion with conductive heat transfer in the reaction zone and surrounding medium (conjugate problem)

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 5, 1966, 17-24

TOPIC TAGS: thermal explosion, critical explosion condition, conductive heat transfer, physical chemistry theory

ABSTRACT: A study was made of the critical conditions of the thermal explosion of bodies having different geometrical shapes (indefinite plate of finite thickness, cylinder of infinite length and finite radius, and sphere), located in an indefinite medium in the presence of conductive heat transfer both in the internal and external regions (conjugate problem). An analysis was made of the external problem of the theory of thermal conductivity for the case involving constant temperature of the interface between the media. It was shown that, in the

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ACC NR: AP7000046

cases of plane and cylindrical symmetry, the existence of critical conditions for the thermal explosion is associated with the "burning out" of the substance in the preexplosion period, which takes place in the case of a nonzerth order reaction. There exist no critical conditions for those shapes in the case of a zeroth order reaction. In the case when the temperature of the interface undergoes random variations, the conjugate problem is reduced to a boundary value problem; in this case, the criterial analysis method makes it possible to establish integro-differential equations for heat fluxes across the surface of the body. Integro-differential equations were used for the criterial analysis of the system, and for the analysis of limiting cases of ideal heat transfer (boundary conditions of the first gender) and of the absence of temperature distribution in the reaction zone. Calculations of the critical conditions of the thermal explosion were carried out on an electronic computer, and the results were processed in the criterial form. The critical conditions of the thermal explosion of the system, initial substance — surrounding medium, were calculated under different specific conditions. The special features of the thermal explosion were analyzed for the case of conductive external heat removal. It was shown that in the vicinity of critical conditions a quasi-stationary thermal regime holds for the reaction because of a decrease in time of the effective external heat transfer coefficient. The authors thank B. I.

Card 2/3

ACC NR: AP7000046

Khaykin and V. V. Barzykin for valuable advice. Orig. art. has: 7
figures. [W. A. 68]
[BO]

SUB CODE:20,21/ SUBM DATE: 25Jul65/ ORIG REF: 010/ OTH REF: 003

Card 3/3

L 47312-65 EPA(w)-2/EWT(1)/EEC(t)/EWA(m)-2 Pi-4/Pe-5 IJP(c) AT/GS
 S/0000/64/000/000/0295/0299
 51
 841

ACCESSION NR: AT5007922

AUTHOR: Val'ter, A. K.; Grigor'yev, Yu. N.; Dudkina, I. N.; Ivanov, V. F.;
 Il'in, O. G.; Koba, I. I.; Kondratenko, V. V.; Mocheshnikov, N. I.; Tarasenko, A.
 S.; Terekhov, B. A.; Tolstoy, A. Ye.; Shenderovich, A. M.; Grishayev, I. A.

TITLE: The apparatus of the Physicotechnical Institute, Academy of Sciences,
Ukrainian SSR, for colliding electron beams with energies of 200 x 100 Mev for ex-
periments on the scattering of electrons on electron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963.
 Trudy. Moscow, Atomizdat, 1964, 295-299

TOPIC TAGS: high energy accelerator, high energy plasma, particle beam, particle
 physics, charged particle beam

ABSTRACT: Work on colliding electron beams in the Physicotechnical Institute,
 Academy of Sciences, Ukrainian SSR, was begun in 1960. The existence of linear
 electron accelerators was basic for the initiation of such work. At the first
 stage, it was decided to stop at electron storage devices of 100 Mev energy, since
 it was found that even at such comparatively small energies of the colliding beams

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L 47312-65

ACCESSION NR: AT5007922

many problems can be solved. The most convenient storage design is a system of race-tracks with a common linear section in which the collision of the two beams is effected. A distinctive property of the Institute's storage device is the great lengths of the linear sections, equal to 50 and 80 cm for a radius of revolution of 50 cm. The great length of one pair of linear sections in each of the rings was selected in order to provide for measurement of the minimum angle of scattering. Selection of a small radius of revolution was due to the requirement of minimum equilibrium dimensions of the beam and to the tendency to have a not too long time for damping of the beam oscillations. To localize the region of interaction, the beam orbits are distorted in the vertical plane by means of two "intersecting" magnets that create a homogeneous field in the radial direction. The magnets are arranged in the common linear section. The length of each of the "intersecting" magnets equals 10 cm, and the magnetic field strength is up to 640 oersteds. The magnets deflect the equilibrium orbit by 1 cm from the median plane. The quadrants have a constant magnetic field index of $n = 0.425$. The coupled magnets in the section that is common for both orbits have zero gradient; the index in the remaining sections is $n_1 = 0.450$. The stability of the Institute's system is characterized by a diagram showing field index n in the quadrants versus the field index n_1 in the coupled magnets. The regions of stability and resonance lines of various

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orders are indicated in the diagram and discussed. The selected operating point is at a maximum distance from the resonances; in this case the frequencies of betatron radial and vertical (axial) oscillations are respectively equal to $\nu_r = 1.145$; $\nu_z = 0.6956$. The internal dimensions of the vacuum chamber were 100×40 mm. The determining problem here was the conditions governing the beam input into the storage device. The beam is fed to an inflector through a magnetic channel. The initial conditions are so chosen that the beam can by-pass in the first six revolutions the inflector set a distance of 2.25 cm from the equilibrium orbit. The behavior of the storage device in the first six revolutions is described. In case the trailing edge of the magnetic field pulse lasts for three revolutions of the particles in the storage device, the introduction of particles into the chamber can also be prolonged in the course of three revolutions. In order to capture particles in the storage device it is necessary to create with the help of inflector magnets a magnetic field strength of $H_I = 1900$ oersteds, $H_{II} = 2630$ oersteds. The system of tolerances is evaluated on the assumption of the following parameters for the input beam: width $a = 0.5$ cm, height $b = 0.3$ cm, angular divergence: radial $\Delta\gamma_r = 2 \cdot 10^{-3}$ and vertical $\Delta\gamma_z = 5 \cdot 10^{-4}$. Preliminary measurements indicate that this data can be realized in the case of the Institute's apparatus. The requirements on

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the stability of the magnetic field of the inflector are: $\Delta H_I/H_I = 10\%$, $\Delta H_{II}/H_{II} = 3\%$. Taking into consideration the indicated quantities, the maximum values of the curvature of the radial betatron oscillations will be equal respectively to $F_I = 2.8$ cm, $F_{II} = 4.1$ cm. According to computations, the equilibrium dimensions of the beam must be $a_z = 0.04$ cm; $a_r = 0.2$ cm. Due to the quantum fluctuations in synchrotron radiation, the longitudinal dimension of the particle bunch equals 40 cm for a gap voltage of about 1.5 kilovolts. The mean energy expended on an electron per revolution, taking into account the coherent radiation, is equal to 220 electron-volts. The time of oscillation damping amounts to 100 msec. Alternate injection of the beam of electrons in the ring is effected by three sector magnets with double focusing. The introduction of a beam turned away from the accelerator and with zero initial conditions is ensured by the application of a cylindrical magnetic shield with a shielding coefficient varied along the length. All the magnets are supplied with power from sources that have a current stability of at least 0.02%. The report also discusses the vacuum chamber, voltage generator, and a few other aspects of the apparatus. Orig. art. has: 5 figures, 2 tables.

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L 47312-65

ACCESSION NR: AT5007922

ASSOCIATION: Fiziko-tehnicheskiy institut AN UkrSSR (Physicotechnical Institute,
AN UkrSSR)

SUBMITTED: 26May64

ENCL: 00

SUB CODE: EE, NP

NO REF SOV: 000

OTHER: 000

Card 5/5712

ACCESSION NR: AP3001770

S/0188/63/000/003/0032/0043

AUTHOR: Kolesnikov, N. N.; Grigor'yev, Yu. P.

TITLE: On the theory of isotope shifts.

SOURCE: Moscow. Universitet. Vestnik. Seriya 3. Fizika, astronomiya, no. 3, 1963, 32-43

TOPIC TAGS: isotope shift, nuclear volume effect, band spectrum

ABSTRACT: A new relativistic formula for the nuclear volume effect to be used for investigations based on the isotope shift in line spectra has been derived on the basis of a rewritten solution of the Dirac X_1 and X_2 radial function equation. The treatment made possible the replacement of the Wilets formula with a more accurate one which takes into account the alterations of the electron wave function. The results obtained may be generalized to cases of nuclear densities which are neither restricted to finite distances nor spherically symmetrical. Orig. art. has: 1 table and 4 figures.

Card 1/2

ACCESSION NR: AP3001770

ASSOCIATION: Kafedra elektrodinamiki i kvantovoy teorii (Department of Electrodynamics and Quantum Theory)

SUBMITTED: 04Jun62

DATE ACQ: 09Jul63

ENCL: 00

SUB CODE: PH

NO REF SOV: 005

OTHER: 021

Card 2/2

ACCESSION NR: AP4013378

S/0040/64/028/001/0025/0038

AUTHOR: Grigor'yev, Ye. P. (Leningrad)

TITLE: A class of linear optimal problems

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 1, 1964, 25-38

TOPIC TAGS: linear optimal problem, minimization of functionals, linear differential equation, variable coefficient, linear boundary condition, optimal control, variational problem

ABSTRACT: The author studies the problem of minimization of functionals of special form with relations given by linear differential equations with variable coefficients and linear boundary conditions of general form. The functionals are given in the form of integrals of functions of the length of the vector of controls. The controls occur linearly in the right parts of the differential equations and are bounded in modulus. For such cases the author solves the problem of uniqueness and existence of optimal controls and establishes the relation between these problems and problems on high speed. He proposes methods for finding the gradients of minimizable functions with the help of solving certain systems of differential equations. Orig. art. has: 63 formulas.

Card 1/1

UMANSKIY, A.A.; AFANAS'YEV, A.M.; VOL'MIR, A.S.; GRIGOR'YEV, Yu.P.;
KODANEV, A.I.; MAR'IN, V.A.; PRIGOROVSKIY, N.I.; SNITKO, I.K.,
redaktor; AKHLAMOV, S.N., tekhnicheskiy redaktor.

[Collection of problems on the strength of materials] Sbornik
zadach po soprotivleniyu materialov. Moskva, Gos. izd-vo tekhn.-
teoret. lit-ry, 1954. 480 p. (MLRA 7:12)
(Strength of materials)

PROLOV, Vladimir Moiseyevich; GRIGOR'YEV, Yu.P., kand. tekhn. nauk, red.;
SHEYNFAYN, L.I., izdatel'skiy red.; PUKHLIKOVA, N.A., tekhn. red.

[Using the method of correcting functions in calculating deformations of cantilever plates] Primenenie metoda korrektsionnykh funktsii v raschetakh deformatsii konsol'nykh platin. Moskva, Gos. izd-vo obr. promyshl. 1957. 34 p. (Moscow, Tsentral'nyi aero-gidrodinamicheskiy institut. Trudy, no.705).

(Elastic plates and shells)

(MIRA 11:3)

KISELEV, Vladimir Filippovich; GRIGOR'YEV, Yu. P., kand. tekhn. nauk, red.;
KUZNETSOVA, A.G., izdatel'skiy red.; LEBEDOVA, L.A., tekhn. red.

[Stress analysis of a delta wing taking the elastic sealing into consideration] Metod rascheta treugol'nogo kryla na prochnost' s uchetom uprugoi sadelki. Moskva, Gos. izd-vo oboronnoi promyshl., 1957. 41 p. (Moscow. Tsentral'nyi aero-gidrodinamicheskii institut. Trudy, no.703).

(MIRA 11:1)

(Airfoils)

UMANSKIY, Aleksandr Azar'yevich; GRIGOR'YEV, Yu.P.; -kand. tekhn. nauk,
dotsent; ROSTOVTSEV, G.G., doktor tekhn. nauk, prof., retsenzent;
ZASLAVSKIY, B.V., kand. tekhn. nauk, red.; BELEVTSOVA, A.G., red.
izd-va; ROZHIN, V.P., tekhn. red.

[Structural mechanics of airplanes] Stroitel'naya mekhanika samoleta.
Moskva, Gos. nauchno-tekhn. izd-vo Oborongiz, 1961. 528 p.

(MIRA 14:12)

(Airplanes)

(Strength of materials)

S/133/62/000/006/008/015
A054/A127

AUTHORS: Murdasov, A. V., Grigor'yev, Yu. P.

TITLE: The optimum pressure applied to the grinding wheel in polishing metals

PERIODICAL: Stal', no. 6, 1962, 541

TEXT: Tests were carried out at the Chelyabinskiy metallurgicheskiy zavod (Chelyabinsk Metallurgical Plant) to determine the optimum pressure for grinding wheels. In these tests, 1X18H9T (1Kh18N9T) grade steel was polished with 3 125CT 3B (E125ST3B) type, 300 x 40 x 75 mm size wheels, having the same hardness and volumetric weight, while radial forces of 40, 65 and 95 kg were applied. It was found that when the radial forces increased, the consumption of the grinding wheels rises beyond their productivity. When the radial force is increased from 40 to 95 kg, the quantity of metal removed will be raised from 61 to 196 gr/min, while the consumption of wheels rises from 35 to 169 gr/min. Thus, the specific output of the wheels (i.e. the quantity of metal polished off per unit weight of the wheel) is reduced by a factor of more than 1.5. The tests and cal-

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The optimum pressure...

S/133/62/000/006/008/015
A054/A127

culations showed that applying radial forces between 40 and 80 kg reduces the initial costs of the process. Although the specific output of the wheels decreases in this case and consequently the consumption of wheels will be higher, the increased output saves money owing to less labor being required for the process for polishing per unit weight of the metal. At the Chelyabinsk Metallurgical Plant, the E125ST3B grinding wheels are operated at a pressure of 60 - 65 kg, which increases the productivity of the process by 35 - 50%. There are 2 figures. ✓

ASSOCIATION: UralVNIIASH

Card 2/2

ACCESSION NR: AT4014049

S/3073/63/000/000/0170/0177

AUTHOR: Grigor'yev, Yu. P.

TITLE: Analysis of the reasons for the scatter of fatigue test results

SOURCE: Prochnost' metallov pri peremennykh nagruzkakh; materialy* tret'yego soveshchaniya po ustalosti metallov, 1962 g. Moscow, Izd-vo AN SSSR, 1963, 170-177

TOPIC TAGS: fatigue, fatigue test, metal fatigue

ABSTRACT: The exact determination of the mechanical characteristics of a metal requires a large number of specimens to make statistical treatment of the experimental results applicable. The analysis of the distribution of experimental points shows that the scattering of the stresses in the specimens obeys the normal distribution law, but that the normal logarithmic distribution law has to be applied to the number of fatigue cycles. The distribution of the number of cycles can be expressed by the formula:

$$\Delta \lg N = BC = \frac{2 \Delta \sigma}{\lg \alpha} \quad (1)$$

where BC is the interval of scattering, $\Delta \lg N$ is the increase in the logarithm of the number of cycles, $\Delta \sigma$ the maximum deviation of the true stress from any

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ACCESSION NR: AT4014049

mean value, and α the angle of inclination of the fatigue curve. Analysis of the experimental data on the fatigue strength of construction materials showed that, in the interval of limited durability of the material, the scatter of the number of cycles is 10 - 20 times larger than the scatter of the stresses. Orig. art. has: 15 formulas, 3 tables and 4 graphs.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 20Feb64

ENCL: 00

SUB CODE: MM, *IE*

NO REF SOV: 003

OTHER: 0007

Corp 2/2

ACC NR: AP7002634 (/1, N) SOURCE CODE: UR/0413/66/000/023/0101/0185

INVENTOR: Grigor'yev, Yu. P.; Morozov, A. A.

ORG: None

TITLE: A device for determining the most significant digit in the difference between two binary numbers. Class 42, No. 134071.

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1961, 185

TOPIC TAGS: binary number, digital system, computer component

ABSTRACT: This Author's Certificate introduces a device for determining the most significant digit in the difference between two binary numbers being compared by digits. The device is simplified and its speed is increased by connecting the inputs to an exclusive OR circuit which is connected through a blocking circuit to the generators of the "ones" connected to the second inputs of the corresponding cells in the blocking circuit. The inputs of the device are also connected to switches with their second inputs tied to the output of the exclusive OR circuit and their outputs connected through shift circuits to the memory circuit which serves as the output for the device.

SUB CODE: 09/ SUBM DATE: 07Mar60

Card 1/1

UMANSKIY, A.A.; AFANAS'YEV, A.M.; VOL'MIR, A.S.; GRIGOR'YEV, Yu.P.;
KODANEV, A.I.; MAR'IN, V.A.; NOVITSKIY, V.V.; TIKHOMIROV,
Ye.N., retsenzent; SNITKO, I.K., red.

[Collection of problems on the strength of materials]
Sbornik zadach po soprotivleniiu materialov. 1zd.2.,
perer. i dop. Moskva, Nauka, 1964. 550 p. (MIRA 18:1)

GRIGOR'YEV, Yu.S.

Ivan Tikhonovich Vasil'chenko; 1903 -; on the occasion of his 60th birthday and the 35th anniversary of his research activities.
Bot. zhur. 49 no.7:1085-1087 J1 '64 (MIRA 17:8)

1. Institut botaniki AN UzSSR, Tashkent.

DUTKIN, G.S.; ROSHCHIN, P.I.; CHUKHOV, S.P.; GRIGOR'YEV, Yu.S., red.;
PRILEPSKAYA, V.D., tekhn. red.

[Electric insulators and accessories of 35 to 500 kv. electric
power transmission lines] Isoliatory i armatura linii elektropere-
dachi 35-500 kv. Moskva, 1959. 92 p. (MIRA 14:9)

1. Moscow. Nauchno-issledovatel'skiy institut elektropromyshlennosti.
TSentral'noye byuro tekhnicheskoy informatsii.
(Electric lines—Overhead)

VVEDENSKIY, A.I.; GRIGOR'YEV, Yu.S.; KNORRING, I.G.; KRECHETOVICH,
V.I.; OVCHINNIKOV, P.N.; FILATOVA, I.F.; CHUKAVINA, A.P.;
ZENDEL', M.Ye., tekhn. red.

[Flora of the Tajik S.S.R.] Flora Tadzhikskoi SSR. Glav. red.
P.N.Ovchinnikov. Moskva, Izd-vo AN SSSR. Vol.2. [Cyperaceae -
Orchidaceae] Osokovye-Orkhidnye. 1963. 454 p. (MIRA 16:8)
(Tajikistan--Monocotyledons)

BARANNIKOV, A.A., inzh.; GRIGOR'YEV, Yu.S.

Starting, adjusting, and regulating operations at the "Komsomolsk"
coal preparation plant. Nauch.trudy KuzNI Uglar bog. no.2:78-86 '64.
(MIRA 17:10)

GRIGOR'YEV, Yu.S.

Data on the history of tragacanth flora of Pamir-Alai. Trudy TFAN SSSR
18:129-139 '51. (MIRA 8:8)
(Pamir-Alai--Gum tragacanth)

GURSKIY, A.V.; KANEVSKAYA, I.B.; OSTAPOVICH, L.F.; GRIGOR'YEV, Yu.S., otv.
red.; MATVEYEV, M.I., red.; KOTSABENKO, Ye.G., red. izd-va; PROLOV,
P., tekhn. red.

[Principal results of introducing plants in the Pamir Botanical
Garden] Osnovnye itogi introduktsii rastenii v Pamirskom botaniche-
skom sadu. Stalinabad. Izd-vo Akad nauk Tadzh SSR. 1953. 97 p.
(Akademiia nauk Tadzhikskoi SSR, Stalinabad. Trudy, vol.16)

(MIRA 12:6)

(Gorno-Badakhshan Autonomous Province--Botanical gardens)

010 511.7.0

Guide to the state of the environment of Stalingrad. Moscow. 1984. 11. - 11. - k
SSSR, 1984. 200 p. (54-21:84)

QX574.G7

KORBONSKAYA, Ya.I.; GRIGOR'YEV, Yu.S., redaktor; KOROLEVA, A.S., redaktor;
PROLOV, P.M., tekhnicheskii redaktor.

[Rust fungi of Tajikistan] Rzhavchinnye griby Tadzhikistana.
Stalinabad, Izd-vo Akademii nauk Tadzhikskoi SSR, 1954. 94 p.
(Akademiia nauk Tadzhikskoi SSR, Stalinabad. Trudy, vol.30).

(MLRA 9:11)

(Tajikistan--Uredineae)

GRIGOR'YEV, Yu.S.; KUPREVICH, V.F.; redaktor; VIKHREY, S.D., redaktor;
ARONS, R.A., tekhnicheskii redaktor.

[Comparative-ecological study of the xerophilisation of higher
plants] Sravnitel'no-ekologicheskoe issledovanie kserofili-
zatsii vysshikh rastenii. Moskva, Izd-vo Akademii nauk SSSR,
1955. 157 p. (MLRA 8:11)
(Xerophytes)

GRIGOR'YEV, Yu.S.

One of the immediate tasks of present-day biology. Izv.Otd.est.
nauk AN Tadsh.SSR no.12:99-110 '55. (MLRA 9:10)

1. Sovet proizvoditel'nykh sil Severa Akademii nauk Tadshikekoy
SSR.

(BIOLOGY)

GRIGOR'YEV, Yu.S.

Comparative ecological investigation of Aflatunia ulmofolia and two species of Amygdalus; on the question of the relationship between experimental and "descriptive" botany. Izv. Otd. est. nauk AN Tadzh.SSR no.20:71-92 '57. (MIRA 11:8)

1. Sovet po izucheniyu proizvoditel'nykh sil AN Tadzhikskoy SSR.
(Almond)